REMARKS

Initially, Applicants would like to express their appreciation to Examiner Hoang for the courtesies extended to Applicants' attorney during a telephone interview on January 26, 2004. The telephone interview involved a discussion of claim 1, claims 13-14, and the cited Upp reference. At the conclusion of the interview, Examiner Hoang agreed in principle that transmitting a signal loss code in place of the data could overcome the Upp reference, however, he would need to review the amended claims in light of the cited references.

After the foregoing amendment, claims 1-26 are pending in the application.

Applicants respectfully request additional consideration and review of the claims in view of the foregoing amendment and the following remarks.

Claim Rejections Under 35 U.S.C. §112

The Examiner has rejected claims 16-17 and 19-20 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have responded to this rejection by amending the claims.

In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. §112 be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 2, 4-8, 10-12, 16, and 19 under 35 U.S.C. §103(a) as being unpatentable over Upp et al. (U.S. Patent No. 5,040,170) in view of Fatehi et al. (U.S. Patent 6,535,313). Also, the Examiner has rejected claims 15, 17-18, and 20 under 35 U.S.C. §103(a) as being unpatentable over Upp et al. (U.S. Patent No. 5,040,170). Applicants respectfully submit that even if it were obvious to combine Upp and Fatehi in the manner suggested in the Office Action, the resulting combination would not embody Applicants' inventive teachings nor anticipate Applicants' claims.

As stated in the prior amendment, a purpose of Applicants' invention is to communicate the existence of faults that occur in a data communications system when, for example, a separate signaling link or channel, which could otherwise be used to signal to various network elements the existence of a fault, does not exist. Applicants' invention communicates the existence of faults to a corresponding receiver by transmitting a signal loss code, for example, in place of the data that would otherwise be transmitted. This aspect of Applicants' invention is pointed out, for example, in independent claim 1 that calls for a multiplexer interface that is adapted "to apply said signal loss code insert to said multiplexer in place of said data packets from said at least one of said first Gigabit Ethernet links having said first loss of signal". Since the multiplexer output is ultimately transmitted over an optical link to a receiver, the transmission of the signal loss code insert in place of the data packets causes the existence of a fault or faults to thus be made known at the receiving end of the recited optical link. Similar language appears in claim 7. See, for example, page 16, lines 18-20 in Applicants' specification where this aspect of the invention is discussed.

Turning now to the cited references, Upp and Fatehi, are both generally concerned with equipment for multiplexing and cross-connecting signals. Upp multiplexes and cross-connects a plurality of low speed and high-speed electrical signals into an electrical SONET formatted signal. Also, Upp teaches the loss of signal causes a bit to be set in the status register of an exception report handler block which is internal to the SONET Path Terminator, which is a box internal to a SONET cross-connect system located, as shown in FIG. 4 and pointed out in column 11, lines 31-35. Fatehi multiplexes optical signals in a wavelength division multiplexing (WDM) cross-connect system/router. In the Office Action, the Examiner acknowledges that Fatehi fails to teach of a transceiver used to operate as a loss of signal detector or a code used to represent a signal loss.

In the Office Action, the Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the loss of signal indicator from Upp in the WDM cross-connect system/router in Fatehi. Applicants assert, however, that even if the cited

references could be combined, the resulting combination would not embody Applicants' inventive teachings nor anticipate Applicants' claims.

Based on Applicants' understanding of the Office Action, the SONET path overhead BIP-8 B3 byte and a bit in the status register of the exception report handler are viewed by the Examiner as loss of signal code inserts. Applicants will address each item separately.

First, loss of signal in Upp causes a bit to be set in the status register of the exception report handler, which is internal to the SONET Path Terminator. (See Column 11, lines 29-36) Even assuming that the status register of the exception report handler could be called a "receiver" and assuming that the bit set in the status register is a "loss of signal code insert", the fact remains that, contrary to Applicants' invention and the language of Applicants' claims, Upp's arrangement does not transmit the signal loss code insert to the "receiver" in place of the data packets that would otherwise be sent.

Second, Applicants' invention generates a signal loss code insert after detecting a loss of signal in an input/output link. Applicants' signal loss code insert is transmitted to a receiver along a portion of an optical link in place of the data packets from the at least one of the first Gigabit Ethernet links having the first loss of signal. In Upp, the BIP-8 B3 byte is used for error monitoring. The BIP-8 B3 byte is a part of the SONET path overhead, and it is inserted in the SONET signal on the transmit side of the SONET path terminator. (See Column 12, lines 14-18) As is known in the art, the BIP-8 byte is calculated over all bits of the line overhead and payload envelope capacity of the previous STS-1 frame before scrambling. However, contrary to Applicants' invention, the SONET BIP-8 B3 byte is generated as SONET path overhead and inserted in the SONET signal before detecting loss of signal and carried with the SONET signal even after detecting the loss of signal. These distinctions are sufficient to distinguish Applicants' invention from Upp.

Combining Upp with Fatehi would not embody Applicants' claimed invention. As noted above, Applicants' invention transmits the loss of signal code insert to a receiver in place of data packets. This means that Applicants'

invention uses the same signal path for 1) data packets that originate from "working" links that later contain faults that prevent the transport of the data packets and 2) the signal loss code insert. Contrary to Applicants' invention, Upp uses one path to transport the signal payload (i.e. data bytes), and a separate path to communicate loss of signal to the exception report handler. (See FIG. 4) Combining Upp with Fatehi would still result in two separate paths for the signal payload and loss of signal indicators. This distinction is sufficient to distinguish Applicants' invention from Upp and Fatehi.

In summary, Applicants' invention does not read on Upp, nor does combining Upp with Fatehi embody Applicants' invention. In particular, even assuming that the cited references could be combined, the fact remains that, contrary to Applicants' invention:

- Upps' arrangement for communicating loss of signal generates the BIP-8 B3 byte before detection of a fault rather than after detection,
- Upp's BIP-8 B3 byte is transported along with the data (i.e., SONET payload) rather than in place of the data,
- Upp's bit to be set in the status register of the exception report handler is transmitted along an electrical link within a box, rather than being transmitted to a receiver across a portion of an optical link, and
- Within the SONET Path Terminator, Upp uses one path to transport the signal payload and a separate path to communicate loss of signal to the exception report handler, rather than a single path for both.

Whether or not it would have been obvious to combine Upp with Fatehi in the manner suggested in the Office Action, it is submitted that each of these claims is allowable at least for the reasons set forth hereinabove.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 1-2, 4-8, 10-12 and

15-20.

Rejections Under 35 U.S.C. § 102(b)

The Examiner has rejected claims 13-14 under 35 U.S.C. §102(b) as being unpatentable over Upp et al. (U.S. Patent No. 5,040,170). Applicants have responded by amending the claims.

Based on Applicants' understanding of the Office Action, the SONET path overhead BIP-8 B3 byte and a bit in the status register of the exception report handler are viewed by the Examiner as loss of signal code inserts. Applicants will address each item separately.

First, even assuming that the status register of the exception report handler can be called a "receiver", and assuming that the bit set in the status register is a "loss of signal code insert", the fact remains that, contrary to Applicants' invention, Upp's arrangement does not transmit the signal loss code insert to the "receiver" in place of the data. Upp makes no mention of a signal loss code insert being transmitted in place of the data and it cannot be assumed from the patent that it exists.

Second, Applicants communicate the existence of a fault by transmitting a fault-identifying signal in place of the data "along at least a portion of said optical link" after detecting the fault. Contrary to Applicants' invention, the BIP-8 B3 byte in Upp is generated and inserted in the SONET signal before detecting loss of signal and transmitted with the SONET signal after detecting loss of signal.

Finally, contrary to Applicants' invention, Upp uses one path to transport the signal payload, and a separate path to communicate the loss of signal to the exception report handler. (See FIG. 4) Applicants' invention uses the same path for 1) data that originates from working links that later contain faults that prevent the transport of the data and 2) the signal loss code insert. Again, these distinctions are sufficient to distinguish Applicants' invention from Upp. Therefore, Upp cannot be said to anticipate the above-noted recitations in claims 13 and 14.

In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. §102(b) be withdrawn.

Claim Amendment

Claims 1, 2, 7, 11, and 13-20 have been amended to more clearly and particularly point out that which Applicants regard as the invention and to improve their form generally.

New Claims

New claims 21 – 26 have been added. Claim 21 includes limitations directed towards further defining the data transmission system. Claims 22-23 include limitations directed towards further defining the method of communicating the existence of a fault. Claim 24 includes limitations directed towards further defining the system of communicating the existence of a fault. Claims 25-26 include limitations directed towards further defining the multiplexer interface.

Conclusion

In view of the foregoing amendments and remarks, Applicants submit that claims 1-26 are in condition for allowance, and reconsideration is therefore respectfully requested. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is invited to contact the undersigned to resolve the issues.

Respectfully submitted,
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Atts.

I hereby certify that this correspondence is being deposited in the United States Postal Service as first class mail in an envelope with sufficient postage addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on FEB 10, 2004

Sharon L. Lobosco Date 2/10/04
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